Moving to Snow Leopard Server

Session 622

These are confidential sessions—please refrain from streaming, blogging, or taking pictures.

Moving to Snow Leopard Server

Schoun Regan
Manager, Provider Development

John Poynor
Senior Technical Service Consultant, Education

André LaBranche
Software Seed Engineer

Introduction

- Preparing to upgrade from Leopard to Snow Leopard Server
- Focus on critical aspects of the transition
  - Service configurations
  - Password Server and KDC
  - Wiki, blogs, and Mail
  - Users, Groups, and computer accounts
- Mac OS X Server Upgrading and Migrating Guide will assist you in this process

What You'll Learn

- Terminology
- Backup
- Rules of Engagement
- Upgrades
- Migration

Terminology

Which to Do?

- Update
- Upgrade
- Migrate

Update vs. Upgrade

Update

verb |ˌəpˈdāt; ˈəpˌdāt| [trans.]
make (something) more modern or up to date: security measures are continually updated and improved | [as adj.]

Upgrade

verb |ˈəpˌgrād; ˌəpˈgrād| [trans.]
raise (something) to a higher standard, in particular improve by adding or replacing components

Migrate

Migrate |ˈmīˌgrāt|
verb [intrans.]
move from one specific part of something to another.
Computing change or cause to change from using one system to another.
[trans.] Computing transfer (programs or hardware) from one system to another.

Versioning

- Upgrade or migrate
  - Tiger v10.4.11
  - Leopard v10.5.6 or later

Clean Install

- Small deployment
- User-created data is backed up
- Can easily recreate limited number of users
- You keep nothing from the older server
- No specific Access Control Lists

Decisions Decisions…

- Think about your current deployment
- Which one makes the most sense to you?
- What tools are necessary to accomplish each method?
- Before a decision can be made, back up

Full Backup Procedure

Backup!

- Always have the backup ready to go in case of a failed upgrade
- Quick and dirty Xserve backup solution
  - Provides reliable method of restoring remote Xserve quickly
  - You *can* try this at home

Remote Xserve Backup Solution

- Install Mac OS X (not Server) on third partition
  - Use disk image if remote, and copy disk image over
- Use same administrator name and password
- Turn on `ssh`, ARD, and copy over `preferences.plist` from Server
  - `/Library/Preferences/SystemConfiguration/`

Remote Xserve Backup Solution

- Boot from third disk and ensure login can occur
- While booted from third disk, create read/write sparse disk image and clone server volume to disk image
- Boot back into server and set script to mount and sync disk image

Where Are We?

- Decided on an installation method
- Backed up our current server
- Before we go any further…

Rules

“Never update a production server without a full and current résumé.”

Unknown

Some Rules

- Back up, back up, back up
- Some homegrown configuration file customization may have been “fixed” by the upgrade
- Poor DNS hygiene will be dealt with harshly
- System `launchd` files in, WILL be overwritten with newer versions in Snow Leopard

Server Admin Tools

- Upgrade Remote Administration Software
  - v10.6.x Server Admin Tools
- Tiger Server Admin Tools will not work with Snow Leopard Server

NetBoot Images

- NetBoot images created with Mac OS X Server v10.4 and later can be reused

Demo

André LaBranche
Enterprise Seed Engineer

Upgrade

Upgrade In-Place Scenarios

- Tiger Local to Snow Leopard
- Tiger Master to Leopard Master (Open Directory)
- Leopard Advanced to Snow Leopard

Upgrade In-Place

- Live upgrade on the server itself
- Boot from DVD and run Server Assistant
- Meet specified hardware requirements
  - Intel only
- Ready-to-go backup if things go awry
- Restart server

Live Upgrade Scenario—Open Directory

- Upgrade Master first
- Upgrade each replica
- Test with some clients
- Test with some more clients
- Once testing confirms no issues, get your Snow Leopard Server Master and Replica groove on!

Upgrade Nuke and Pave—Open Directory

- Archive using Server Admin of Mac OS X Server v10.5.x
- Back up other custom configuration (DS ACLs for example)
- Perform clean install of Snow Leopard Server and update
- Promote to Open Directory Master
- Use Server Admin to restore v10.5.x archived disk image
- Joy

Upgrade Server Service Changes

- Each service has at least one config file
  - Customized config files? Back to the configuration file slide, do not pass Go
- Customized smb.conf files should be checked against updated version to ensure edits are preserved
  - `/private/etc/smb.conf`

Directory Services

Directory Services

- LDAP
- Kerberos
- Binding

LDAP

- Custom schema edits may not be preserved
- `slaptest` command notates changes

slaptest

- `slaptest` command necessary for custom schema
  - `slaptest -f slapd.conf -F slapd.d`
  - Converts ".conf" configuration into cn=config format
- cn=config
  - cn=config contains the OpenLDAP Runtime Configuration
  - Used to allow configuration changes without service restart

Group Accounts

- Legacy groups can be upgraded to take advantage of fun new features
  - New attributes and associated values (GUIDs)
- Computer Lists can also be updated to the new Computer Groups in a similar fashion

Binding

- If server is bound to another Directory System, unbind prior to upgrading—then rebind
- Bound clients also create Kerberos record in local config file
  - Overrules edu.mit.Kerberos file (which still exists)
- May cause issues with LDAP Groups consisting of bound users

Services

- DNS
  - Failure to upgrade results in a neutered DNS GUI in Server Admin
    - DNS still works though
- Printing
  - Recreate queues with same name
  - Import service settings using `serveradmin` tool
    - `serveradmin settings < oldprintsettings`

Demo

André LaBranche
Enterprise Seed Engineer

Migration

Automated Migration

- Mount previous system's volume on newly installed Snow Leopard while running Setup Assistant
- Select option to "Transfer the information from an existing server"
- Select the previous system's volume from the list

Manual Migration

- Export Users and Groups
- Create archives of service configuration files and data
- Note share points and privileges
- Copy Users and Groups export, plus archives to new server
- Set up home directory infrastructure
- Import Users and Groups
- Relocate service configuration files and data from archives
- Set up share points and privileges
- Test the new server

A Note on OD with Replicas

- Order of operations
  - Migrate the OD Master first
  - Migrate the OD Replicas (without the OD data)
  - Re-establish each as OD replica after migration

Export Settings

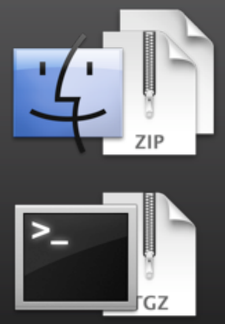
Export Tools

- GUI
  - Workgroup Manager
    - User, Groups, Computer Groups, [Computers]
  - Server Admin
    - Services, Open Directory archive
- CLI
  - `dsexport` (since 10.5)
    - User, Groups
  - `serveradmin`
    - Services and settings

Export Tools

- GUI
  - Workgroup Manager
    - User, Groups, Computer Groups, [Computers]
  - Server Admin
    - Services, Open Directory archive
- CLI
  - `dsexport` (since 10.5)
    - User, Groups
  - `serveradmin`
    - Services and settings

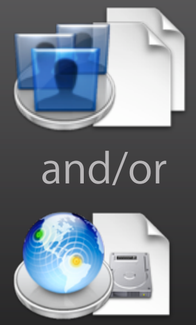
Import



Copy archived files to new server

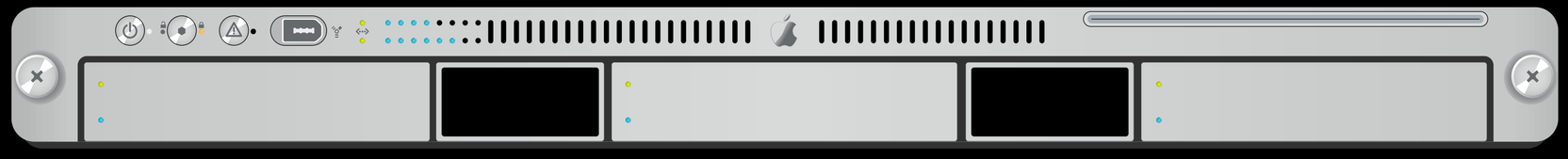
Reimport/set up Services settings

Configure home directory structure



Import Users, Groups, Computer Groups, etc., or restore Open Directory

Set up and check permissions, test all services



Migrate/Import

- GUI
  - Workgroup Manager
  - Server Admin
- CLI
  - `dsimport`
  - `serveradmin`

Verify Authentication

- Listing Kerberos principals
  - `sudo kadmin.local -q listprincs`
- Obtaining Kerberos ticket
  - `kinit <username>`
- Listing Password Server users
  - `sudo mkpassdb -dump`
- Verifying Password Server passwords
  - `dscl /Search -auth <username>`

Migration Tools

- /System/Library/ServerSetup/MigrationExtras
  - 59_webconfigmigrator tool to migrate Web service settings.
  - 50_ipfwconfigmigrator to export Firewall service settings.
  - 58_jabbermigrator.pl to migrate iChat service settings.
  - ...and many more

Migrating v10.5 Services

- Web configuration data
- Web content
- MySQL data
- Mail database
- WebMail data
- FTP configuration files
- LDAP server settings
- NetBoot images
- Tomcat data
- WebObjects applications and frameworks
- JBoss applications
- AFP settings
- SMB settings
- IP firewall configuration
- DNS settings
- DHCP settings
- NAT settings
- Print settings
- VPN settings
- User data, including home directories
- QuickTime Streaming Server files and folders
- QTSS Publisher files and folders
- User and group accounts
- iChat server settings

Configuration and Data Locations

- Web
  - /etc/apache2/
  - /Library/WebServer/
  - /Library/Collaboration/
- Tomcat
  - /Library/Tomcat/webapps/
- JBoss Applications
  - /Library/JBoss/3.2/deploy/
- WebObjects
  - /Library/WebObjects/
  - /System/Library/WebObjects/
- QuickTime Streaming
  - /Library/QuickTimeStreaming/
- QTSS Publisher
  - /Library/Application Support/Apple/QTSS Publisher/
  - /Users/<publisher_user>/Library/Application Support/Apple/QTSS Publisher/

Configuration and Data Locations

- Mail Database
  - /var/imap/
  - /var/spool/imap/
  - /usr/bin/cyrus/bin/ctl_mboxlist
  - /var/db/squirrelmail/data/
- NetBoot Images
  - <name>.nbi folder for each image
- iChat Server
  - /var/jabber/spool
  - /etc/jabber/
- MySQL Data
  - use `mysqldump`
- Print
  - use `serveradmin`
- FTP
  - /Library/FTPServer/Configuration/
  - /Library/FTPServer/Messages/
- AFP
  - /Library/Preferences/com.apple.AppleFileServer.plist

Configuration and Data Locations

- SMB
  - /etc/smb.conf
- NAT
  - /etc/nat/natd.plist
- DHCP
  - `serveradmin`
- DNS
  - /etc/named.conf
  - /var/named/
- IP Firewall
  - run `sudo /System/Library/ServerSetup/MigrationExtras/50_ipfwconfigmigrator`
  - /etc/ipfilter
- VPN
  - /Library/Preferences/SystemConfiguration/com.apple.RemoteAccessServers.plist
  - /Library/Keychains/System.keychain
  - /etc/racoon/psk.text

Demo

André LaBranche
Enterprise Seed Engineer

Migrate Replicas?

- Why upgrade unless non-stop operation is critical?
- Clean install of Leopard Server
  - Then become a Replica of new Master

Home Directories

- Zip, Copy, Unzip, Relax

Where Are We?

- Depending on your path, you either moved or checked your databases
  - NetInfo
  - LDAP
  - Password Server
  - KDC
  - Home Directories

Where Are We?

- Regardless of your path
  - Customized config files need extra care and feeding
  - You handled each service and tested to ensure it works as expected
  - You may have gained some GUI help or you may have chosen to sway more towards the CLI

Before Upgrading or Migrating

- Attend this session √
- Back up at least once
- Set up private test environment
  - Test the backup
  - Test the upgrade or migration

Wrap Up

- Upgrading/migrating is, and has always been, a process that was not totally error free
- Planning and testing are the best defense against a blown production server and downtime

Related Sessions

Snow Leopard Server Setup: Under the Hood	Russian Hill Wednesday 9:00AM
What's New in Directory Services	Nob Hill Wednesday 9:00AM

Labs

Directory Services Lab	Information Technologies Lab Wednesday 10:30AM

More Information

Mark Malone
Internet and Server Technologies Evangelist
mmalone@apple.com

Apple Training and Certification
http://training.apple.com

Q&A

WWDC Session Survey

You can rate your sessions on the WWDC Attendee Site.

Survey forms are located on each session description page at:

developer.apple.com/wwdc/attendee

WWDC09